

AMENDMENTS TO THE CLAIMS

1. (Currently amended) An interactive book reading system (~~600~~) responsive to a human finger presence, the system comprising:

(a) a radio frequency (RF) scanning circuit (~~675~~) configured to detect the presence of a human finger when the finger enters an RF field generated by the RF scanning circuit (~~675~~);

(b) a control circuit (~~610~~) in communication with the RF scanning circuit (~~675~~);

(c) a memory (~~615~~) in communication with the control circuit (~~610~~), the memory (~~615~~) storing a plurality of audible messages; and

(d) an audible output device (~~650~~) in communication with the control circuit (~~610~~), wherein the audible output device (~~650~~) outputs at least one of the audible messages based on an analysis of the RF field performed by the control circuit (~~610~~) when the finger enters the RF field[.];

wherein the RF scanning circuit comprises a matrix of conductive lines arranged as a plurality of spaced apart column conductive lines on a first major side of an electrically insulative sheet and a plurality of spaced apart row conductive lines transverse to the plurality of column conductive lines on a second major side of the electrically insulative sheet opposite the first side, wherein for each specific column conductive line:

(i) an RF signal is input into the specific column conductive line according to a predetermined input sequence as directed by a first coordinated control signal outputted by the control circuit, and

(ii) coupled RF signals received from the specific column conductive line by the plurality of row conductive lines are outputted according to a predetermined output sequence as directed by a second coordinated control signal outputted by the control circuit.

2. (Cancelled)

3. (Currently amended) The system of claim [[2]] 1 wherein the RF scanning circuit (~~675~~) further comprises an RF oscillator (~~620~~) which generates the RF signal that is input into the specific column conductive line.

4. (Currently amended) The system of claim 3 wherein the RF scanning circuit (675) further comprises an input switching circuit (625) in communication with the control circuit (610), the RF oscillator (620) and the column conductive lines of the matrix (630), the input switching circuit (625) receiving the first coordinated control signal (655) from the control circuit (610) and the RF signal generated by the RF oscillator (620), the input switching circuit (625) sequentially routing the RF signal generated by the RF oscillator (620) to each of the column conductive lines according to the predetermined input sequence.

5. (Currently amended) The system of claim 3 wherein the RF scanning circuit (675) further comprises an output switching circuit (635) in communication with the control circuit (610) and the row conductive lines of the matrix (630), the output switching circuit (635) receiving the second control signal (660) from the control circuit (610) and the coupled RF signals, the output switching circuit (635) sequentially outputting the RF coupled signals according to the predetermined output sequence.

6. (Currently amended) The system of claim [[2]] 1 wherein the RF scanning circuit (675) further comprises a bandpass processing circuit (640) in communication with the control circuit (610) and the matrix (630), the bandpass processing circuit (640) amplifying and filtering the coupled RF signals, and routing the amplified and filtered coupled RF signals to the control circuit (610) for analysis.

7. (Original) The system of claim 6 wherein the amplified and filtered coupled RF signals are AC voltage sine wave signals.

8. (Currently amended) The system of claim 6 further comprising an AC to DC converter (645) in communication with the control circuit (610) and the bandpass processing circuit (640), wherein the AC to DC converter (645) transforms a peak of the amplified and filtered coupled RF signals to DC level signals.

9. (Currently amended) The system of claim 6 wherein the bandpass processing circuit ~~(640)~~ includes a bandpass filter and a bandpass amplifier.

10. (Currently amended) The system of claim ~~[[2]]~~ 1 wherein the RF signal has a frequency of approximately 100 kHz.

11. (Currently amended) The system of claim ~~[[2]]~~ 1 wherein the amplitude of the RF signal is approximately 18 VAC.

12. (Cancelled)

13. (Currently amended) The system of claim 1 wherein the control circuit ~~(610)~~ includes a microcontroller.

14. (Currently amended) A method of using ~~[[an]]~~ the interactive book reading system of claim 1 ~~(600)~~ responsive to the presence of a human finger, the method comprising the steps of:

(a) detecting the human finger as the finger enters an RF field generated by the scanning circuit of the reading system ~~(600)~~; and

~~(b) storing a plurality of audible messages; and~~

(b) [[(c)]] outputting at least one of [[the]] a plurality of stored audible messages based on an analysis of the RF field when the finger enters the RF field.

15. (Currently amended) The method of claim 14 wherein ~~the reading system (600)~~ includes a ~~matrix (630) of conductive lines arranged as a plurality of spaced apart column conductive lines and a plurality of spaced apart row conductive lines transverse to the plurality of column conductive lines, and~~ step (a) further comprises:

(a)(i) inputting an RF signal into a specific one of the plurality of column conductive lines according to a predetermined input sequence;

(a)(ii) outputting coupled RF signals received from the specific column conductive line by the plurality of row conductive lines according to ~~[[a]]~~ the predetermined output sequence; and

(a)(iii) repeating steps (a)(i) and (a)(ii) for each of the column conductive lines.

16. (Currently amended) The method of claim 15, further comprising analyzing one or more electrical characteristics of the coupled RF signals after ~~[[an]]~~ the RF signal is input into all of the column conductive lines.

17. (Currently amended) The method of claim 15, further comprising:

~~[[d]]~~ (c) amplifying and filtering the coupled RF signals; and

~~[[e]]~~ (d) transforming a peak of the amplified and filtered coupled RF signals to DC level signals.

18. (Previously presented) The interactive book reading system of claim 1 wherein the control circuit is configured to analyze and select as a probable user input a single probable human finger presence from among a plurality of possible human finger presences detected simultaneously by the scanning circuit.

19. (Currently amended) The interactive book reading system of claim 18 wherein:
~~the scanning circuit includes a matrix of the first plurality of~~ conductive lines are
~~arranged as a first plurality parallel to and spaced apart from one another and~~ [[a]] the second
~~plurality oriented transversely to the first plurality of~~ conductive lines[[,]] are arranged the
~~second plurality being parallel to and spaced apart from one another and separated from the first~~
~~plurality of~~ conductive lines by an electrically insulated layer;

the matrix has a preferred orientation with a side most proximal a user designated as a southern side of the matrix and a side opposite from and most distal to the user and to the southern side designated as a northern side of the matrix; and

the control circuit is configured to select from among the plurality of possible human finger presences sensed simultaneously by the scanning circuit, a single most northern possible human finger presence as the probable user input.

20. (Previously presented) An interactive book reading system responsive to a human finger presence, the system comprising:

(a) a radio frequency (RF) scanning circuit configured to detect the presence of a human finger when the finger enters an RF field generated by the RF scanning circuit;

(b) a control circuit in communication with the RF scanning circuit;

(c) a memory in communication with the control circuit, the memory storing a plurality of audible messages; and

(d) an audible output device in communication with the control circuit, wherein the audible output device outputs at least one of the audible messages based on an analysis of the RF field performed by the control circuit when the finger enters the RF field; and wherein

the control circuit is configured to analyze and select as a probable user input a single probable human finger presence from among a plurality of possible human finger presences detected simultaneously by the scanning circuit;

the scanning circuit includes a matrix of conductive lines arranged as a first plurality parallel to and spaced apart from one another and a second plurality oriented transversely to the first plurality of conductive lines, the second plurality being parallel to and spaced apart from one another and separated from the first plurality of conductive lines by an electrically insulated layer;

the matrix has a preferred orientation with a side most proximal a user designated as a southern side of the matrix and a side opposite from and most distal to the user and to the southern side designated as a northern side of the matrix;

the control circuit is configured to select from among the plurality of possible human finger presences sensed simultaneously by the scanning circuit, a single most northern possible human finger presence as the probable user input; and

the control system is further configured to select from the plurality of possible human finger presences detected by the scanning array as the probable user input one of at least two of the possible human finger presences sensed by the scanning array to be most northern of all the plurality and at least approximately equally most northern on the matrix.

21. (Previously presented) The interactive book reading system of claim 20 wherein the control system is further configured to select as the probable user input a single sensed possible human finger presence that extends from and yet adjoins on one side a cluster of the plurality of possible human finger presences sensed by the scanning circuit.

22. (Previously presented) The interactive book reading system of claim 20 wherein the control circuit is further configured to select from among the plurality of stored audible messages an audible message instructing the user to make another selection if the control circuit is unable to select the probable user input from among the plurality of possible human finger presences sensed simultaneously by the scanning circuit.

23. (Currently amended) A method of using an interactive book reading system responsive to the presence of a human finger, the method comprising the steps of:

(a) detecting the human finger as the finger enters an RF field generated by the reading system;

~~(b) storing a plurality of audible messages; and~~

~~(b) [[[c)]] outputting at least one of [[the]] a plurality of stored~~ audible messages based on an analysis of the RF field when the finger enters the RF field; and

between the detecting and outputting steps, the steps of analyzing and first selecting from among the plurality of possible human finger presences detected at least generally simultaneously entering the RF field, a single possible human finger entry as a probable user input and further selecting based upon the probable user input, at least one of the stored audible messages.

24. (Previously presented) The method of claim 23 wherein the RF field has a preferred orientation with a side most proximal a user designated as a southern side and a side opposite from and most distal to the user and to the southern side designated as a northern side; and wherein the first selecting step further comprises selecting from among the plurality of possible human finger presences detected at least generally simultaneously entering the RF field, a single most northern point of detected RF field entry as the probable user input.

25. (Previously presented) The method of claim 23 wherein the first selecting step further comprises selecting from among the plurality of detected possible human finger RF field entries as the user input one of at least two of the detected possible human finger RF field entries located most northern in the RF field of all of the plurality of detected possible human finger RF field entries and at least approximately equally most northern in the RF field.

26. (Currently amended) The method of claim ~~[[25]]~~ 23 wherein the first selecting step further comprises selecting as the user input a single sensed possible human finger RF field entry that extends from and yet adjoins on one side of a cluster of the detected plurality of possible human finger RF field entry locations.

27. (Previously presented) The method of claim 23 wherein the outputting step comprises instructing the user to make another selection if the system is unable to select the user input from among a plurality of possible human finger RF field entries detected at least generally simultaneously entering the RF field.

28. (Previously presented) The interactive book reading system of claim 19 wherein:
the matrix has a preferred orientation with a side most proximal a user designated as a southern side of the matrix and a side opposite from and most distal to the user and to the southern side designated as a northern side of the matrix; and

the control system is further configured to select from the plurality of possible human finger presences detected by the scanning array as the probable user input one of at least two of the possible human finger presences sensed by the scanning array to be most northern of all the plurality and at least approximately equally most northern on the matrix.

29. (Currently amended) The system of claim [[2]] 1 further comprising a signal generator configured to generate at a predetermined frequency, the RF signal input into the specific column conductive line and wherein the radio frequency scanning circuit further comprises a bandpass filter selected to pass to the control circuit only those coupled signals from the plurality of row conductive lines at the predetermined frequency.

30. (Previously presented) The method of claim 15 wherein the inputting step comprises providing the RF signal at a predetermined frequency to input into the specific one of the plurality of column conductive lines and wherein the outputting step further comprises outputting only coupled RF signals at the predetermined frequency for the detecting step.

31. (Currently amended) The system of claim [[2]] 1 wherein the memory is further configured to store a DC peak of the received RF signals from each of the column conductive lines for each row conductive line and wherein the control circuit is configured to compare the stored DC peak of the received RF signals with a DC peak of the subsequently received RF signals from the same row conductive line-column conductive line pairs to locate a detected human figure with respect to the matrix.

32. (Previously presented) The method of claim 15 further comprising
the steps of storing a DC peak of the the received RF signals from each of the

column conductive lines for each row conductive line and thereafter comparing the stored DC peak of the received RF signals with a DC peak of the subsequently received RF signals from the same row conductive line-column conductive line pairs to locate a detected human figure with respect to the matrix.